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Soft Skills and Academic Achievement among STEM Students

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Abstract

Soft skills are non-academic skills such as communication, critical thinking and problem-solving, teamwork, lifelong learning and information management, entrepreneurship, leadership and proactivity, as well as ethics and integrity. This study was conducted to identify the relationship between soft skills and academic achievement among science students. This study consists of three main variables which are gender, soft skills and academic achievement. This study follows the quantitative research approach, and a questionnaire was used as the instrument to collect the data. 512 respondents were involved in this research. Components of soft skills involved in this study are communication skills, critical thinking and problem-solving skills, teamwork skills, creativity skills and emotional well-being. Data analysis shows that science stream students in public universities generally possess high levels of soft skills (M = 3.71, S.D. = 0.554). The Structural Equation Model for path coefficient β, t-statistic and p-value indicate a significant relationship between soft skills and students' academic achievement (β = 0.225, t = 4.141, $p<0.05$). Therefore, it can be concluded that when the mastery of soft skills such as communication skills, critical thinking and problem-solving skills, teamwork skills, creativity skills and emotional well-being increases, students' academic achievements also improve.

Keywords: Soft Skills, Academic Achievement, Gender

Introduction

Education plays a role in enhancing a country's economic growth and development. A good education system is the foundation for building a successful nation while also fostering unity among society with multiple races and religions. In addition, a quality education system also provides individuals with an opportunity to improve their standard of living and subsequently contribute to the development of the country. A quality higher education system is expected to produce university graduates who can meet the demands of the globalisation era, which requires skilled employees in all critical fields such as economics, technology and medicine. Higher education is expected to produce students who master various complex skills to enhance human capital, which is crucial for the country's economic development.

Problem Statement

As 21st-century learning emphasises on innovation in Science and Mathematics, it has put forward reforms like the STEM approach (Science, Technology, Engineering and Mathematics), a branch of education initiated in the early 1990s in the United States (Koehler, Binns dan Bloom, 2016). Integrated STEM is considered the ideal STEM as it combines all four elements of STEM (Bunyamin dan Finley, 2015). It refers to teaching and learning that incorporate elements of Science and Mathematics along with the integration of engineering practices and design through relevant technologies (Bryan et al., 2016). Integrated STEM differs from the previous STEM approach because the earlier STEM separated the four fields of STEM, while the integrated STEM approach spans various types of knowledge rather than being isolated (Hurd, 1998).

It is widely known that academic achievement, as reflected by good results in official examination, is a determinant of an individual's level of success. In Malaysia, academic excellence is undeniably still a benchmark and a priority in any educational institution, and it is indeed the expectation from both parents and educators (Nur Adzrina dan Norhayati, 2017). Thus, this study focused on students' academic achievement. According to Ching-Hsue, Yun-Chun and Wei-Xiang (2019), the concept of students' academic achievement can be assessed through the results obtained at both lower and higher levels. Students' excellence, including those in the STEM fields, is often associated with several factors, such as learning styles, family socio-economic status and gender, which are said to influence their success.

According to Kumar and Sarangi (2018), the increase in female student enrolment in STEM fields has a positive impact on both the current and future overall economic growth. A study by Makarem and Wang (2019) found that female students who choose STEM fields possess a high level of competitiveness based on their confidence and leadership attitudes. Another study by He et al. (2020) noted that female students in STEM fields have shown good achievements, particularly at higher education levels while a study by Zainuddin and Kutty (2021) involving female students from the STEM field found that the motivation of these students is at a high level, and they are very positive towards STEM subjects. However, there are also studies found that male students are more motivated towards STEM subjects compared to female students (Sagala et al., 2019).

Besides academic achievements, students should possess generic or soft skills. STEM subjects emphasise skills and creativity, which are not suitable to be assessed solely based on academic achievement (Nursyahirah and Denis, 2020). Therefore, another aspect that needs attention is the mastery of soft skills among students. Soft skills are non-academic skills such as communication, critical thinking and problem-solving, teamwork, lifelong learning and information management, entrepreneurship, leadership and proactivity, as well as ethics and integrity (Nur Farah Su'aidah and Mohd. Isa, 2020).

In Japan's context, the unemployment rate has been lowest since November 1993, indicating that the world's third-largest economy is on a solid path to recovery, even though the recovery process is slow (Ministry of Internal Affairs and Communications of Japan, 2019). Factors such as technological mastery, emphasis on education, collaboration between government and industry and healthy work ethic have enabled Japan to grow rapidly, making

it one of the largest economic powers in the world. Meanwhile, the world's second-largest economy, China, is reducing unemployment by creating job opportunities and encouraging entrepreneurship among its population. The authorities of the country are relying on 'new growth engines' such as technology and services to support job creation. The unemployment rate in China fell to 3.9 per cent in 2017 and remained stable despite slow economic growth (NDRC, 2018).

Students who fail to master soft skills such as communication skills, interpersonal skills, problem-solving skills and leadership skills will result in their inability to pursue further education. They will also find it challenging to secure employment (Haslina, 2015; Fatahiyah et al., 2018). Moreover, in the current era of the industrial revolution, highly skilled and efficient workers are greatly needed to operate various automation systems or to work alongside robots to enhance productivity (Noor Mohamad, 2018). It is even more frustrating when graduates who have found jobs but lack interpersonal skills, which ultimately cause problems for their employers (Mohd Firdauz, Mohamad Izzuan and Mohd Zolkifli, 2022).

A study by Marlina and Shaharom (2016) argued that employers value good communication skills more than academic achievement. This proves that graduates not just to be academically smart but also possess other skills as an added value to enhance productivity in industry. Other studies support this finding, stating that employers and industries in Malaysia are currently facing issues with the quality of human resources in the STEM field, specifically the lack of graduates with soft skills that encompass life skills, problem-solving abilities, broad knowledge and noble character. (Amirah et al., 2018). On the other hand, a study by Halimah and Nurul Qatimah (2017) found that university lecturers are prepared in terms of skills, knowledge and attitudes towards the implementation of soft skills in the teaching process. Lecturers play a role as catalysts in enhancing students' soft skills and producing quality graduates to meet industry demands by using various methods in the teaching and learning process.

Purpose of The Study

This study was conducted to identify the relationship between soft skills and academic achievement among STEM students.

Objectives of The Study

The specific objectives of this study are as follows,

a) Identify the soft skills and academic achievement of STEM students in public universities.
b) Identify the soft skills and academic achievement of STEM students in public universities based on gender.
c) Identify the relationship between soft skills and academic achievement of STEM students in universities.

Research Hypothesis

The hypotheses for this study are:

H01: There is no significant influence of gender on soft skills among STEM students in universities.

H02: There is no significant influence of gender on the academic achievement of STEM students in universities.

H03: There is no significant relationship between soft skills and academic achievement of STEM students in universities.

Framework of the Study

Module of Soft Skills Development (2006) for higher education institutions was used in this study. While the module is still relevant, there has been an evolution of the components of soft skills between 2006 and the present. The evolution of soft skills components is summarised in **Table 1**.

Table 1
Evolution of Soft Skills Components

Subject		Soft Skills Components
Module of Soft Skills Development (2006)	:	Communication skills, critical thinking and problem-solving skills, teamwork skills, continuous learning and information management skills, entrepreneurial skills, professional ethics and moral skills and leadership skills.
World Economic Forum 2016	:	Skills in solving complex problems, critical thinking, creativity, human management, interpersonal relationships, emotional intelligence, judgment and decision-making, service orientation, negotiation and cognitive flexibility.
World Economic Forum 2017	:	4C elements, which are critical thinking and problem solving, communication, collaboration, dan creativity.
Cotet et al. (2017)	:	Interpersonal skills, personal assertiveness, respect, self-strength, empathy, desire, spirit of perfection, self-discipline, curiosity, manners, freedom and creativity.
Che Aleha et al. (2018)	:	Critical thinking and problem-solving skills, communication, collaboration, creativity and emotional well-being.

Based on the Module of Soft Skills Development (2006), this study only focused on five main components, which include three elements in the module: communication skills, critical thinking and problem-solving skills and teamwork skills, along with two additional elements, creativity and emotional well-being. Three elements from the module were retained because communication skills, critical thinking and problem-solving skills and teamwork skills are the main aspects sought by employers (Zakaria et al., 2017).

Creative thinking skill is included as a component of soft skills because students who are exposed to creative thinking will be better prepared to face more complex problems and rapid technological changes that occur. Creative students have high curiosity about various matters, do not easily get bored when learning something, are willing to take risks with the decisions they make, possess self-confidence, are independent in carrying out tasks and have diverse thinking (Anita et al., 2020). Emotional well-being is included as a component of soft skills because it produces more motivated employees in carrying out their tasks and directly

enhances the performance and productivity of a particular organisation (Mohammad Izzat Akmal dan Wan Shahrazad, 2018).

Literature Review

This study focuses on five elements of soft skills, namely communication skills, critical thinking and problem-solving skills, teamwork skills, creativity and emotional well-being.

Communication Skills

Communication skills are a critical element of interpersonal skills that enable individuals to accurately and effectively convey information to others. Communication skills are usually measured based on the selection of good language style, politeness, demonstrating a noble personality, using words that reflect respect for the listener, and, most importantly, using clear and easily understandable sentences (Meor Osman & Wahab, 2018). According to Rodríguez Martínez et al. (2021), weak language proficiency among graduates will hinder their competence in managing intellectual discussions in the workplace. Employers need workers who possess communication skills along with good personality traits. This is because communication skills encompass components such as verbal skills, writing skills, listening skills and having a positive attitude towards others. Communication skills are considered one of the most important and necessary skills to produce a highly skilled and quality workforce who can become efficient employees.

Critical Thinking and Problem Solving

Critical thinking is a careful and in-depth thought process aimed at clarifying and improving understanding, as well as encouraging an individual to examine the truth about a fact or an issue. Critical thinking, according to Scriven and Paul (2008), is a form of thinking that aligns with other 'modes of thinking' such as scientific thinking, mathematical thinking, historical thinking, economic thinking, moral thinking and philosophical thinking. Critical thinking encourages individuals to think more systematically by considering any form of ideas and opinions before deciding. When people apply critical thinking skills, such as evaluating matters comprehensively with an open mind, it indirectly helps them become more confident in their actions and leads to more accurate decisions based on concrete and clear arguments and evidence.

Problem-solving skills refer to the methods or ways to resolve an issue using the most accurate and efficient approaches. Problem-solving skills are part of the thinking process that is considered the most complex intellectual function and has been defined as a high-level cognitive process (Goldstein dan Levin, 1987). Higher-order thinking skills and problem-solving skills are among the important skills in determining students' employability. Personal characteristics, attitudes, habits, behaviours, communication styles, problem-solving skills, decision-making abilities and organisational management processes are aspects that are closely related to students' employability (Buck & Barrick 1987).

Teamwork Skills

Teamwork is an understanding and commitment among all members of the team who support each other, share responsibilities and are always dedicated to working towards the team's goals (Lussier dan Achua, 2000; Alauddin Sidal, 2004); moreover, according to Ab. Aziz (2003), teamwork is a combination of several individuals with interdependent competencies

in terms of abilities, expertise, skills and knowledge. They have accountability and commitment to the team's performance and are ready to take on challenging tasks. Yeop (2003) also stated that teamwork is the collaboration between employers and employees who carry out their responsibilities effectively.

Therefore, it can be concluded that teamwork refers to a form of responsibility carried out within a team to achieve the goals and aspirations of an organisation, association, department and company. A systematic work system is needed to achieve that goal. Several principles can shape an effective team, such as each team member must commit to the team's goals, maintain mutual respect among team members, practice open communication, work collaboratively and take responsibility for their respective tasks. Another study by Zahari Hashim (2019) found that effective teamwork prioritises work quality and productivity while fostering innovation and creativity among group members. Effective teamwork can also enhance the spirit and motivation among members within the organisation.

Creativity

Creativity is uniqueness possessed by humans. According to the perspective of psychology, creativity means the ability to generate new ideas or products (Clarkson, 2005). Creativity is also the production of new products and solutions to vague ideas (Amabile, 1983). Creativity can be distinguished from invention, which involves exposure to something that has not been encountered before or a discovery of something that already exists (Liane Gabore, 2013). Creativity is an ability experienced by humans and everyone has the potential to possess this ability to varying degrees (Jamilah and Sahlan, 2017). Creative thinking will heavily utilise the right side of the brain. An individual who possesses the skill of thinking creatively uses their mind to explore various possibilities in producing something new and original, whether it is concrete or abstract.

Creativity can also be seen through the unique characteristics of an individual, the materials and tools used, research and events, people in the environment, as well as the experiences they go through. The element of creativity is said to differentiate individuals from one another, especially in processing information and solving problems (Syazwani Amiza and Saemah, 2017). The development of creativity and innovation among students aims to produce human capital that is creative and innovative. Previous studies indicate that the element of creativity among students needs to be continuously emphasised in the teaching and learning process. Nor Azzatunnisak and Saemah (2013) found that individual factors, such as personal and environmental, affect students' creativity. Moreover, it was stated that students understand the definition of creativity, but only a few of them are truly creative (Musta'mal et al., 2017).

Emotional Well-being

The concept of well-being encompasses various dimensions, including mental or psychological, physical and social. Emotional well-being explains the mental or psychological concepts related to life satisfaction, purpose and positive emotions (Mohd Ridhuan et al., 2023). According to the World Health Organization (WHO), mental health is defined as a state of well-being in which individuals are aware of their abilities, can cope with the normal stresses of life, can work productively and are able to make significant contributions to the community. Mental health is important at every stage of life, from childhood to adolescence

to adulthood. Emotion refers to strong feelings and is divided into various types, such as love, joy, hatred, fear, jealousy, excitement or disturbance (Zahanim, Abdul Razaq and Mohd Mahzan, 2019). Emotions also reflect strong feelings arising from a person's mental state and emotions, occurring naturally depending on the situations encountered in daily life.

University students also face issues related to their emotional well-being. Stress and pressure are often regarded as significant threats to mental health (Awang 2016). Mental health issues are currently increasing among university students and have a significant impact on their academic achievements (Wenjuan et al., 2020; Bruffaerts et al., 2018). A study by Muhammad Wafi and Sharifah Rohayah (2020) has identified learning as the dominant factor contributing to stress among university students. University students are individuals who experience continuous pressure due to life changes throughout their studies (Ganesan et al., 2018). Academic pressure also causes university students to lose self-confidence, experience depression and may have negative behavioural issues (Dwyer and Cummings, 2001; Deb, Stoudl and Sun, 2015; King, Bennett and Holloway, 2014). If academic pressure is viewed as something negative, it will have a detrimental effect on the physical, mental, emotional and academic performance of the student. Meanwhile, if the pressure is viewed from a positive perspective, it will serve as motivation for the students to achieve better academic results.

Research Methodology

The quantitative approach was used in this study because it is more compatible with the design and objectives of the research. This study consists of three main variables which are gender, soft skills and academic achievement. The soft skills variable consists of five sub-variables, namely communication skills, critical thinking and problem-solving skills, teamwork skills, creativity and emotional well-being. In the meantime, academic achievement was measured based on the students' CGPA. The population of this study consisted of students currently pursuing studies in the STEM field in Malaysia, hence, the study involved STEM undergraduate students in Malaysian public universities.

The instrument used in this study comprised a set of questionnaires, which was divided into three domains: (i) demographics, (ii) academic achievement, and (iii) soft skills. This questionnaire used a five-point Likert scale, which is a commonly applied standard scale in social science research. The scale was used to determine the students' level of agreement to statements related to soft skills, ranging from 5 Strongly Agree (SA), 4 Agree (A); 3 Disagree (D), 2 Strongly Disagree (SD); and 1 Strongly Disagree (STS).

A pilot study was conducted to test the reliability of the research instrument by using the Rasch measurement model through Winsteps 4.8.1.0. The Five main analyses conducted comprised i) item fit, ii) item bias, iii) unidimensionality and iv) reliability index and item-person separation index. The overall result of the pilot study data analysis shows a Cronbach's Alpha (KR-20) value of 0.85 which demonstrates that the instrument has very good and effective reliability with a high level of consistency. In addition to the reliability of the instruments, the findings from the pilot study were also analysed to obtain the reliability index of respondents and items, as well as the discrimination index of respondents and items, as shown in Table 2.

Table 2
Reliability Index and Discrimination Index of Respondents and Items for the Overall Instrument Construction

	Reliability Index	Discrimination Index
Respondent	0.85	2.34
Item	0.95	4.45

Linacre (2012) argued that if the respondent reliability index exceeds 0.80 and the item reliability index exceeds 0.90, then these values are highly acceptable. For the reliability value of respondents, the tested items are able to distinguish the abilities of one individual from another for a measured variable, while the reliability value of the items indicates that the items are equivalent even when the same items are given to another group of individuals with similar characteristics (Bond dan Fox, 2015). For the isolation index, a value exceeding 2.0 indicates a good and acceptable index (Bond dan Fox, 2015). The results indicate that these items are capable of differentiating individuals based on their abilities and categorising items according to the levels of difficulty.

The data collection process was carried out by using Google Forms. The link to the forms was distributed to prospective respondents via online applications such as WhatsApp, Telegram, Instagram and Facebook Messenger. Quantitative data processing was carried out using the Statistical Package for Social Science (SPSS) version 20.0 and Smart PLS 3.0 software and involved descriptive statistics and inferential statistics.

Research Findings

Demographics

This study was conducted among students studying the STEM field in Malaysian public universities. **Table 3** shows the demographic distribution of the respondents involved in this study.

Table 3
Demographic Distribution of the Respondents

	n	Percentage (%)
Gender		
Male	164	32.0
Female	348	68.0
CGPA		
< 2.00	8	1.6
2.00 – 2.67	8	1.6
2.68 – 3.00	28	5.5
3.01 – 3.33	80	15.6
3.34 – 3.67	152	29.7
3.68 – 4.00	236	46.1

Soft Skills

This study focused on the variable of soft skills, which encompasses five dimensions: communication skills, critical thinking and problem-solving skills, teamwork skills, creativity and emotional well-being. The findings are shown in **Table 4**.

Table 4
Soft Skills

	Mean	Standard Deviation	Interpretation
Communication	3.89	.614	High
Critical Thinking and Problem-Solving	3.76	.651	High
Teamwork	4.13	.677	High
Creativity	3.39	.757	Moderate
Emotional Well-Being	3.37	.793	Moderate
	3.71	.554	High

Data analysis shows that science stream students in public universities generally have high levels of soft skills (M = 3.71, S.D. = 0.554). The findings indicate that communication (M = 3.89, S.D. = 0.614), critical thinking and problem-solving (M = 3.76, S.D. = 0.651) and teamwork (M = 4.13, S.D. 0.677) is at a high level, while creativity (M = 3.39, S.D. = 0.757) and emotional well-being (M = 3.37, S.D. = 0.793) are at a moderate level.

Table 5
Comparison of Soft Skills based on Gender

	Gender	Mean	Standard Deviation	Interpretation
Communication	Male	3.96	0.725	High
	Female	3.86	0.551	High
Critical Thinking and Problem-Solving	Male	3.87	0.673	High
	Female	3.70	0.634	High
Teamwork	Male	4.06	0.779	High
	Female	4.17	0.622	High
Creativity	Male	3.48	0.838	Moderate
	Female	3.36	0.714	Moderate
Emotional Well-Being	Male	3.47	0.749	Moderate
	Female	3.32	0.810	Moderate

The findings in **Table 5** indicate that communication, critical thinking, problem-solving and teamwork are at high levels for both male and female students. However, the creativity of male students (M = 3.48, S.D. = 0.838) and female students (M = 3.36, S.D. = 0.714) are at moderate levels. Similarly, the emotional well-being of male students (M = 3.47, S.D. = 0.749) and female students (M = 3.32, S.D. = 0.810) are at a moderate level.

Table 6
The Relationship between Soft Skills and Students' Academic Achievement

		Soft Skills	CGPA
Soft Skills	Pearson Correlation	1	.130**
	Sig. (2-tailed)		.003
	N	512	512
CGPA	Pearson Correlation	.130**	1
	Sig. (2-tailed)	.003	
	N	512	512

**p<0.01; *p<0.05

Table 6 shows that there is a less significant (r=0.130, p<0.05) relationship between soft skills and academic achievement of STEM students in public universities.

Hypothesis Testing

The study also examines the value of crossing coefficient β, t-statistic value and p-value to confirm whether the research hypotheses are rejected or not. Hypothesis testing is viewed from the significant regression load path. Significant values are determined from the critical ratio values, namely t>1.96 and p<0.05. **Table 7** shows path coefficient values β, t-statistic values and p-values obtained from the Structural Equation Modelling.

Table 7
Path Coefficient β, t-Statistic, p-Values and Hypothesis Testing

Construct	*β*	*t*-Statistic	*p*	Hypothesis Testing
Gender → Soft Skills	-0.113	3.366	0.001	Rejected
Gender → CGPA	-0.032	0.813	0.416	Accepted
Soft Skills → CGPA	0.225	4.141	0.000	Rejected

*significant at *t*>1.96 dan *p*<0.05

Discussion

Students' Soft Skills

Components of soft skills involved in this study are communication skills, critical thinking and problem-solving skills, teamwork skills, creativity skills and emotional well-being. Data analysis shows that science stream students in public universities generally possess high levels of soft skills (M = 3.71, S.D. = 0.554).

Communication skill, particularly individual presentation, is closely related to students' level of self-confidence. According to Hamidah (2017), communication skills are the personality trait that influences graduates' employability. Employers need employees with excellent communication skills and good personal characteristics. Communication skills encompass verbal skills, writing skills, listening skills and a positive attitude towards others.

The application of high order thinking questions and learning activities will encourage thinking and problem-solving skills among students. In addition, the problem-based learning (PBL) approach is a student-centred teaching method that allows them to take full control of the problem-solving process, integrating theory and practice, as well as using knowledge and skills to identify solutions, make assessments and draw conclusions about the actions taken.

Teamwork skills include the ethics of teamwork, which include committing to the group's mission, mutual respect among members, collaborative action and taking responsibility for one's tasks. This mutual respect allows students to cooperate well with their peers, regardless of who is appointed as group leader.

Creative thinking can also be defined as creating new ideas and alternatives from broader perspectives and perceptions as well as creating new added value to an idea. According to Gardner (1993), creative thinking skills involve various intelligences such as linguistic, musical, mathematical, spatial, kinesthetics, intrapersonal and interpersonal.

Emotional well-being includes positive feelings such as self-acceptance and self-confidence. A study by Nurul Hidayati, Abdul Razaq and Mohd Mahzan (2015) found that leisure time allocated by each individual in their life, as well as the beneficial activities they engaged in, will impact their well-being, including emotional well-being, happiness and life satisfaction, which ultimately leads to a quality life.

The Influence of Gender on Students' Soft Skills

The Structural Equation Model for path coefficient β, t-statistic and p-value indicate that there is a significant relationship between gender and students' soft skills ($\beta = -0.113$, $t = 3.366$, $p<0.05$). Therefore, the hypothesis was rejected. This is supported by previous research by Sharifah Azizah and Haslinawati (2018), which found differences in soft skills based on gender, with male students demonstrating a higher level of proficiency in soft skills compared to female students.

The Influence of Gender on Students' Academic Achievement

The Structural Equation Model for path coefficient β, t-statistic and p-value indicate that there is no significant relationship between gender and students' academic achievement ($\beta = -0.032$, $t = 0.813$, $p>0.05$). Therefore, the hypothesis is accepted. This is supported by previous research by Mohd Noor (2015), which found that gender is not the main factor contributing to student achievement. The findings of this study contradict previous research by Nyanamani (2017), which found that female students showed higher academic achievement than male students.

The Relationship between Soft Skills and Students' Academic Achievement

The Structural Equation Model for path coefficient β, t-statistic and p-value indicate a significant relationship between soft skills and students' academic achievement ($\beta = 0.225$, $t = 4.141$, $p<0.05$). Therefore, the hypothesis is rejected. The relationship between soft skills and academic achievement was previously studied by Nur Adzrina and Noorhayati (2017), which showed a significant relationship between three aspects of soft skills: communication skills, teamwork skills and critical thinking and problem-solving skills with students' academic achievement. Therefore, it can be concluded that when the mastery of soft skills such as communication skills, teamwork skills, and critical thinking and problem-solving skills increases, students' academic achievements also improve. Another study by Kamarul et al. (2017) found a positive relationship between generic skills and students' academic achievement. Similarly, the study by Kamaruddin, Mubin, and Roshidah (2020) shows a significant relationship between soft skills and academic achievement.

Conclusion

Our country needs well-trained, skilled and productive employees in various fields. Therefore, the human capital that we wish to cultivate is quality human capital that is balanced and competitive, both domestically and internationally. A conducive learning environment will also enhance student engagement and interpersonal skills (Anisa Saleha, 2015; Haslina et al., 2015). Environmental support among students is very important as it plays a role in nurturing students who are balanced both academically and emotionally. Emotional changes such as feelings of inferiority, loneliness and boredom have a negative impact on students. In addition, teachers and lecturers can also serve as mentors to their

students. Guidance and attention from a teacher or lecturer will motivate students to continue seeking solutions to the problems they face.

Notably, human capital is developed through the mastery of soft skills in each student. Four main strategies to cultivate first-class human capital are enhancing knowledge capacity and mastery, strengthening research and development (R&D) capabilities, science and innovation, fostering a cultured society with moral strength and empowering youths and women. In this light, soft skills should development be prioritised by individuals, public and private educational institutions, as well as employers (Nur Farah Su'aidah and Mohd Isa, 2020).

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